

“The best energy saving product you can buy ...”

Two new studies, in America, highlight that a domestic water softener is one of the very highest energy saving and best “Green” technology appliances that a householder can own. Results of the first study demonstrate that untreated hard water can cause significant efficiency losses and added costs in water heating – up to 24% in some cases. The second study looked at detergent usage and stain removal in both washing machines and dishwashers. The results again were remarkably better with softened water compared with hard water. The outcome is that a water softener is now being promoted as ‘the best energy saving product you can buy’.

The energy saving study

With hot water needs accounting for between 14% and 25% of the energy consumed in the home the aspect of water quality has been scrutinised as never before in the drive to improve the performance and the “Green” credentials of water using appliances. In

2009 the Battelle Memorial Institute in Columbus, Ohio was retained by the Water Quality Research Foundation (WQRF) to develop and run tests to determine how much water softeners can contribute to energy savings. The independent Battelle Institute (somewhat similar to the ‘Which’ organisation in the UK), evaluated the energy and costs in heating hard water versus the savings with softened water. They also examined effects on washing machines, tap fixtures, showerheads, and dishwashers using hard water compared with softened water.

Most hot water heaters went through a 15 year accelerated life cycle to provide the data needed. Several types were used and many instantaneous heaters had to be descaled regularly throughout the testing period. Dishwashers and washing machines also became heavily fouled within very short periods.

In addition to the considerable cost savings Battelle also found hard water rapidly clogged showerheads. According to laboratory results, after just one week of constant testing with hard water, more than 75% of showerhead nozzles became blocked.

Throughout the testing all appliances and fixtures, using softened water, performed nearly as well as on the day they were first installed. In some cases it was forecast that payback time with a water softener due to energy and descaling costs to be 1 year – quite amazing.

The detergent saving study - washing machines

This related study undertaken by Scientific Services Laboratories, near New York, used six liquid and three powder detergents. The stains studied included blood, coffee, grass, red wine, chocolate pudding and ice cream, BBQ sauce, skin sebum and ground in clay. The temperatures used were cold, 15°C and 37°C.

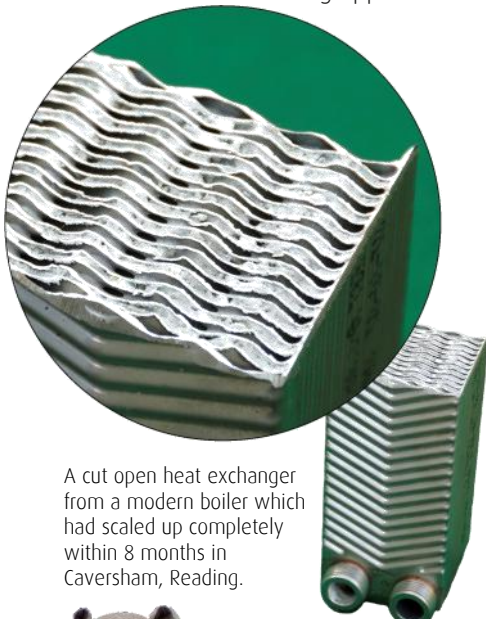
What was most significant was that softened water was 100 times more effective at stain removal than increasing temperature or detergent dose. It was found that when 50% of a detergent was used at 15°C instead of 37°C the washing yielded improved results over hard water. Even cold water achieved the desired soil removal using half the detergent needed in hard water. The results were the same for all the detergents used.

The detergent saving study - dishwashers

In this study four liquid and two tablet non-phosphate dishwasher detergents were used on a variety of stained plates and glassware. The hard to remove soiling included dried milk, egg, spinach, fish, grease, oatmeal, bread crumbs and olive oil.

At hardness levels of 350mg/l (similar to that found in the Thames Valley) savings of around 60%, of the recommended dose of detergent, was observed when using softened water as well as being 6 times more effective in removing spotting. It was also noted that air drying was quicker and could be a way of saving electrical consumption. One detergent was run for an additional three cycles to show that the hardness and dose performance relationship would persist.

See the full report on-line at www.aqua-nouveau.co.uk or go to: www.youtube.com/watch?v=UqP5WaiLb3E



A cut open heat exchanger from a modern boiler which had scaled up completely within 8 months in Caversham, Reading.



Showerheads clog easily



swet
INDUSTRY SPONSOR

See article on page 2

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swet trial surprises in many ways

Eczema experts disappointed

An official NHS three year trial to see whether the installation of a water softener in homes with children with atopic eczema would benefit their condition showed only an equivalent improvement to those on medication. This has surprised and disappointed the experts as the outcome of a previous study had highlighted that a more extensive trial was warranted.

The Centre of Evidence Based Dermatology, at Nottingham University, confirmed a hard water link with eczema in 1998. This was reported in *The Lancet*.

In 2002 the university research team and KINETICO undertook a crucial pilot study using water softeners in the immediate locality. This attracted positive media coverage and consumer interest.

swet (Softened Water Eczema Trial) was set up, by the University, in March 2007 and involved 336 children between 6 months and 16 years in various hard water regions across the UK.

The outcome was less positive than had been expected. Softened water only showed an equivalent improvement to those on medication; about 20%. Hywel Williams, Foundation Professor of Dermato-Epidemiology and Chief Investigator said, "Although surprised and disappointed parental belief that water softeners help eczema is still strong. It is important to realise that other benefits of water softening, in the home, might be important for families too".

The water softener industry through their representative body, the UKWTA, were closely involved in providing technical expertise throughout the trial. The industry met the costs of producing and installing the water softeners. The study findings are independent from any industry influence.

Tony Frost, Technical Director of the

UKWTA stated, "We are proud to have been associated with such a great team of professionals. We are surprised by the results considering the large number of reports we get every year from purchasers of water softeners that a family member's eczema has improved.

Although we did not set out to sell any of the generic water softeners, used on the trial, we did give participants the option to buy. The take up was remarkably high at 66%. A huge surprise bearing in mind some of the lower socio-economic groups within the trial population. Unsolicited comments ranged from *'it has not affected our child's eczema, but we love the other benefits of softened water'* to *'our child's eczema is completely cured - it has transformed our lives'*". He concluded, "Again surprising remarks".

Boosting water main pressure

NEW

With the popularity of direct fed water heating systems and the need for water softeners (see back page) often comes the problem of insufficient mains water pressure. This is common in older property where the feed from the street main to a home is sometimes only 15mm (1/2"). To upgrade this pipe work is often a major and expensive job.

We now have available a mains booster system which is bylaw compliant and does not need a break tank. It is powerful, giving pressures up to 4 bar, and outputs from 36 up to 300 litres a minute. Please contact us for further information.



Our popular ceramic drinking water tap now supplied with most filter systems.

Plumbed-in filters and RO perplex bottled water and jug filter users

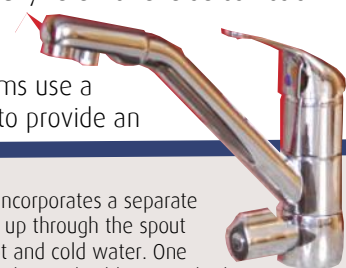
Most consumers turn to bottled water and jug filters when water 'out of the tap' is considered unpalatable. Those looking for a more permanent solution in the home have found they are faced with multi choices in water quality and a bewildering range of products and prices. Many are so confused they end sticking with what they already know. This is very disheartening when there are strong environmental and economic advantages of systems that can be plumbed-in.

Most will fit easily under a kitchen sink and operate either through an attractive third tap (such as the one shown above - see separate leaflet) or via a tri-way tap (shown below). This makes an in-line filter or purifier very easy to use. Water is available in virtually unlimited volumes. This gives a high quality of water for cooking and baking as well as all aspects of drinking.

The main area of misunderstanding is the use of the term filter and purifier. Many view the term as meaning the same thing. This is not so!

Filters usually refer to products utilising activated carbon. All filters, from the simple jug filter to in-line systems, are based upon this media, which can improve most of the aesthetic aspects of water including taste, colour, odour (chlorine) and the removal of particulate matter. The result is a highly pleasing and fresh tasting water.

Purifiers usually refer to reverse osmosis (RO) technology. These systems use a membrane to provide an



This tri-way tap incorporates a separate drinking channel up through the spout alongside the hot and cold water. One lever controls the hot and cold water. The lower controls the drinking water.



T: 01256 844044

Contact us for further information



A KINETICO RO system showing membrane module & separate pure water storage tank in under sink kitchen cupboard.

almost pure H₂O (95 - 98%) for drinking. Unlike filters the impurities are washed away down the drain. RO water is in a league of its own. The water is amazingly thirst quenching. Ice cubes can look like pieces of glass. RO is particularly popular in supplying water to ice making equipment and American style fridges.

Our Trade Association makes its mark

Aqua-Nouveau's membership of the industries trade association, the UKWTA (The United Kingdom Water Treatment Association) involves participation in the Softening and Filter Technical Committee. The influence of this group has been extensive reflecting changes made to the Building Regulations and the way the SWET trial has been conducted.

The UKWTA embodies four main product areas - chemical products, drinking water systems, physical conditioners and water softeners. The association incorporates representation from appliance manufacturers, installers, merchants (wholesalers) and the utilities.

One of the fundamental problems of our industry is still the perception of the products, technology and benefits by consumers and the trade. We are therefore delighted that there is an ongoing emphasis on providing information and helpful advice. Products



will be performance tested and rated enabling customers to make an informed choice. There will naturally be a focus on energy efficiency as well as communicating the considerable importance of the new building regulations and British Standards. It is intended to publish fact sheets, a newsletter and a magazine. Full information at: www.ukwta.org

On the internal front there will be a drive to increase the knowledge, understanding and competence of operatives in the water treatment industry through the development and delivery of appropriate training, Standards and Codes of Best Practice.

The UKWTA has been involved in assisting in the formation a water treatment association for Europe. Along with AquaBelgica, AquaDenmark and UAE (the French trade association) a new organisation has been registered, in Brussels, as the European Water Treatment Association - (EWTA). It is hoped this organisation will rapidly become an international body focusing on the benefits, opportunities, threats and challenges of the POU (point of use) and POE (point of entry) water treatment industry.

Website is packed full of data & information

Aqua-Nouveau's web site (www.aqua-nouveau.co.uk) provides the company with a tool with which it can direct potential customers, giving them immediate access to all company product literature and to a series of educational fact sheets. Over 23 have been produced on virtually every major aspect of in-home water quality.

So if you have a query on some aspect of your own system or are looking for information of a general nature then look no further - most of the answers you need are here.



The 'Aquafact' sheets are shown as

thumb nail pdf files and can be printed at any PC location. The site also has this newsletter and guidance notes on all the services offered by the company including installation and servicing.

Salt efficiency of water softeners - it should be considered important

Salt is the main consumable related to the running cost of a water softener. As they have a long life expectancy (normally over 10 years) you would think that the efficiency of a softener would be a major consideration when purchasing. Our investigations show this is not the case. Few water treatment companies give credence to the topic or even mention it on literature. Aqua-Nouveau is an exception and has quoted salt efficiency figures as part of technical specifications for some years.

Naturally, the price of salt comes into the equation. In some areas this can vary enormously. There tends to be greater emphasis placed on monthly running costs related to savings. This sounds good but can be misleading.

As a guide it is unusual that softeners better 50% salt efficiency such as the Kinetico 2020c. This is a fine example where efficiency and performance matches the reputation. The Aqua-solo, another popular softener from Aqua-Nouveau's range, is also 50% salt efficient which is very good for a traditional, electric operated softener.

A 'new kid on the block' is the Hague 400, which can be 80% salt efficient using almost half the amount of salt of the 2020c. This is a remarkable achievement and sets new parameters in the industry for the future.



The Kinetico 2020c



The Hague 400



Aqua-Nouveau was delighted that their logo design for SWET was adopted by the University of Nottingham.

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Contact us for further information



Residential water treatment is now mandatory

Pressurised, direct fed heating systems prompts Government to act on hard water problems

Traditional loft tank central heating systems are fast giving way to pressurised, direct fed, unvented systems. Their reliance on producing hot water very quickly has exacerbated hard water as a major culprit in increasing scale deposition and consequently poor energy efficiency. This has prompted the Government to introduce Building Regulations that make water treatment mandatory with all new boilers being fitted into new and existing homes. The regulations, which became law in April 2007, are still being implemented in many parts of the country.

This is excellent news for the domestic water treatment industry as well as for consumers. For many years the domestic water treatment industry has trumpeted the huge energy savings and economies to be gained out of improving water quality in the home. Sadly, in the past, this message has often failed to influence the public perception of the real value of water softeners, conditioners and inhibitors. With Government now supporting domestic water treatment it is hoped there will be a substantial increase in awareness about the importance of water quality. Currently only 3.5% of UK homes, in hard water areas, have a water softener.

The revised building regulations (BS7593 and BS6798) have come about through discussions between the water treatment industry and representatives of the Government's Sustainable Energy Initiative. This has been at the top of the Parliament's agenda since 2003.

Demand for water is forever increasing with 56% being used by households. Homes contribute 27% of the UK's carbon dioxide emissions

through gas and electricity use. 70% of the country suffers with hard water resulting in scale and scum problems. It is estimated that a water softener will save an average family over £250 a year in energy and a reduction in product usage such as washing powders, soaps, shampoos, conditioners etc. It has been proven that a 1mm layer of scale can increase energy costs by 7.5%. The continued build up of scale on heat transfer surfaces can escalate this figure considerably eg. 12mm layer = 70%. In addition servicing and replacement costs increase proportionally. It is therefore hardly surprising that the Government now views hard water as a major contributor to energy wastage. The American 'Battelle' report (see page1) only highlights this matter further.

Compliance Guide

The new regulations are set out in the 'Domestic Heating Compliance Guide' (published May 2006) For those requiring more technical information, see our Aquafacts sheet No. 9 - available on our web site or by request.

Testing time for scale reducers / water conditioners

When looking at methods to reduce scaling problems many householders are tempted to consider a scale reducer / water conditioner. Various magnetic and electronic technologies have been around for years including units described as 'wrap round wire' devices. These systems do not soften water but can assist in the control of scale deposition.

Whereas water softeners have clearly defined and recognised performance standards, the 'success' of scale reducers is somewhat 'hit and miss'. This has led to significant bad press for some manufacturers. In addition, some product advertising has attracted the

attention of the Advertising Standards Authority.

Currently there is no appropriate method of assessing scale reducers. Our trade association, the UKWTA, fully appreciates that potential customers should be able to access and accurately quantify the performance of scale reducers particularly related to price and competitive products, such as water softeners. However, equally important is overcoming the misunderstanding that exists between the actual benefits delivered and what the customer is expecting. The results from some scale reducers can be very disappointing. Aqua-Nouveau currently do not believe these products to be worthy of recommendation.

The UKWTA intends bringing together leading academic experts to develop a test protocol suitable for assessing the performance of all types of lime scale reducers, irrespective of the technology employed. No time scale has been placed on this but it is viewed as being an important development particularly in giving official credence to their abilities.

For further information please see Aquafact sheet No 19.

OPTIPLAN
Bespoke Kitchens

Aqua-Nouveau has recently seen a growth in trade business particularly with bathroom and kitchen companies. Optiplan Kitchens has 12 outlets across our sales territory and we are delighted that several managers have requested an installation of a softener in their own homes. We have fitted 3 softeners for the managers of the Basingstoke, Reading and Booker (High Wycombe) showrooms. This will be followed shortly by one for the manager of the Twyford branch.

We are aware that personal experience of softened water will encourage further enquiries from these showrooms. For further information on their bespoke kitchen ranges see our links page on our web site.



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